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                    UNITED STATES DISTRICT COURT
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                  NORTHERN DISTRICT OF CALIFORNIA
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      Before The Honorable Thomas S. Hixson, Magistrate Judge
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 5 RICHARD KADREY, et al.,
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             Plaintiffs,
 7
  VS.
                                    No. C 23-03417-VC
 8 META PLATFORMS, INC.,
 9
             Defendant.
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11
                                  San Francisco, California
                                  Wednesday, January 8, 2025
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    TRANSCRIPT OF PROCEEDINGS OF THE OFFICIAL ELECTRONIC SOUND
             RECORDING 9:34 - 10:36 = 1 HOUR, 2 MINUTES
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9:34 a.m.
  Wednesday, January 8, 2025
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             THE CLERK: We are here in civil action 23-3417,
 5 Kadrey versus Meta Platforms, Inc., the Honorable Thomas S.
  Hixson presiding.
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        Counsel, please state your appearances for the record.
  Let's start with Plaintiffs' counsel.
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             MR. RATHUR (via Zoom): Good morning. Plaintiffs'
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  counsel represented by Mohammed Rathur.
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             THE COURT: Good morning.
12
            MS. POUEYMIROU (via Zoom): Margaux Poueymirou
13 with the Joseph Saveri law firm on behalf of Plaintiffs.
14
             THE COURT: Good morning.
15
             MS. POUEYMIROU: Good morning.
16
            MR. PRITT (via Zoom): Maxwell Pritt, Boies
17 Schiller Flexner, on behalf of the named Plaintiffs in the
18 putative class.
19
            THE COURT: Good morning.
20
            MS. DJORDJEVIC (via Zoom): Nada Djordjevic from
21 DiCello Levitt, also on behalf of Plaintiffs.
22
             THE COURT: Good morning.
23
            MS. SUGAR (via Zoom): Betsy Sugar from Lieff
24 Cabraser, also on behalf of Plaintiffs.
25
             THE COURT: Good morning.
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            MR. GHAJAR (via Zoom): Good morning, your Honor.
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  Bobby Ghajar from Cooley on behalf of the Defendant.
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             THE COURT: Good morning.
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            MS. HARTNETT (via Zoom): And Kathleen Hartnett at
 5
  Cooley, also on behalf of the Defendant.
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             THE COURT: Good morning.
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            MS. HARTNETT: Good morning.
 8
            MS. DUNNING (via Zoom): Good morning, your Honor.
9 This is Angela Dunning from Cleary Gottlieb, also on behalf
10
  of Meta.
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             THE COURT: Good morning.
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        We're here today on the parties' supplemental joint
13 discovery letter brief concerning request for production
14 118. And I had some questions about this.
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        Let me first turn to Plaintiffs' counsel. There are a
16 number of requests that you make in the letter brief, and
|17| one of them is for the post-training datasets used to train
18 and fine tune the LLaMA models, specifically in reference to
19 the intellectual property safety category. And in looking
20 through the LLaMA 3 and LLaMA 2 papers, it looks like there
21 are a number of different safety categories. And so let me
22 ask you, is it correct, to your understanding, that
23 different datasets were used to do fine-tuning for different
24 safety categories?
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            MS. POUEYMIROU: Yes, your Honor.
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5 1 understanding actually would be that for the safety category 2 that pertains specifically to intellectual property, the dataset that would need to be used for that specific category to align the model to Meta's safety policy on that 5 issue would be a dataset comprising copyrighted books sourced from these same shadow libraries that contain our Plaintiffs' asserted works. And so that specific category would require that specific dataset. I can't speak to all 9 of the other categories, but I suspect it would be a similar 10 situation. 11 THE COURT: And what's your basis for thinking 12 that -- I think your argument is that the dataset for finetuning intellectual property actually contains the copyrighted works. Is that correct? 15 MS. POUEYMIROU: Yes. Yes. It contains the 16 copyrighted works. 17 THE COURT: What is your basis for believing that? 18 MS. POUEYMIROU: The basis for believing that is 19 deposition testimony. The basis for believing that are 20 documents that we've received in this case. The basis for 21 believing that is also in the source code, which RFP 22 expressly references, and the source code that focuses on 23 memorization and regurgitation, which are a twin phenomena 24 that pertains specifically to this intellectual property 25 category. That source code references datasets.

1 expressly references datasets. In order for the source code 2 to function, it's running alongside datasets. And we've 3 been -- we are unable to -- we have an incomplete picture. The source code has been produced. It references these These datasets are also discussed in the sections of the LLaMA 2 and 3 papers that we highlighted, specifically in the LLaMA 3 paper, 5.4.7. In that particular section, the intellectual property category is 9 mentioned as one of Meta's safety categories. And so we 10 know it also by looking at the source code. 11 THE COURT: Okay. Thank you. 12 That LLaMA paper also references other safety 13 categories such as defamation and indiscriminate weapons. 14 Is it your understanding that those other safety categories 15 would have different datasets that would do fine-tuning for 16 those categories? 17 MS. POUEYMIROU: So it is my understanding, based 18 on the evidence, that copyrighted books could be used to 19 effectuate -- to align the models, with respect to the 20 categories that you have also identified there, but it is 21 unclear whether that is the case. What we do know is that 22 for the intellectual property category, we do know that 23 copyrighted books were used to effectuate that particular 24 safety policy alignment and that those datasets were sourced from these same datasets that contain our Plaintiffs'

7 asserted works and that are in the complaint. 2 THE COURT: Thank you. And I appreciate the point 3 you're making, that for these other datasets, copyrighted works could be in those datasets as well. My question, 5 though, was more basic than that. It's -- leaving aside what's in the other datasets, is it your understanding that, for example, the datasets used to train for defamation or 8 indiscriminate weapons would simply be -- would be a 9 different dataset? It might have some of the same content 10 as the dataset used to fine-tune for IP, but there would be 11 distinct datasets. Is that your understanding? 12 MS. POUEYMIROU: Based on my understanding of the 13 discovery produced in this case, I think it would be fair to 14 say that there would be discrete datasets used for different 15 safety categories. 16 THE COURT: Okay. 17 Let me turn to Meta and pose the same question to you. 18 Do you agree that different datasets were used to fine-tune 19 the LLaMA models for different safety categories? And I'm 20 not asking you whether, for example, the dataset used to 21 train for defamation was completely distinct from the 22 dataset used to train for intellectual property. 23 could be overlap. What I mean is, if I order Meta to 24 produce datasets used to train for IP, is that going to be different from the datasets used to train for other safety

categories? There might be overlapping content, but is it your understanding that there were different datasets used to train for the different safety categories? 4 MR. GHAJAR: Your Honor, I'll begin, and Ms. 5 | Hartnett may have content to add. My understanding is that there may be different datasets. This is something that we have looked into in connection with this hearing. But I 8 think what's important to keep in mind is, what we've heard 9 from Counsel is based on supposition. There's no citation 10 to any evidence before the Court that the datasets that they 11 seek through this RFP, which I would be remiss if I didn't 12 mention the RFP itself does not call for datasets and is 13 focused on mitigation, not safety and other things. But the 14 datasets that they imagine exist do not contain books. 15 so we're really far afield. 16 And so I believe there are different datasets, but 17 we've seen nothing that suggests that there are books data 18 referred to in the sections of the LLaMA papers that they 19 have keyed in on in their initial discovery brief 308 and in 20 their supplemental brief. 21 And if it would help the Court, I, as I'm sure your 22 Honor did, went through the LLaMA papers and the sections 23 that they cited, and I would like to walk the Court through 24 those and attempt to correlate those sections with what they think exists, and kind of dispel that notion.

9 1 THE COURT: I wouldn't mind. I didn't see in the LLaMA papers much description of what's contained in the 3 datasets. 4 MR. GHAJAR: Well, exactly. And at the last 5 hearing, Plaintiffs' counsel represented to your Honor that 6 -- notwithstanding our dispute that the RFP very plainly does not cover training datasets and notwithstanding that training datasets were called for in other RFPs that your 9 Honor ruled upon and are now untimely. Nonetheless, the 10 representation from Counsel at the last hearing was that 11 they were seeking data reference in the LLaMA papers. And 12 so they cited specific sections. 13 The first section they cited was in the LLaMA 2 paper, 14 section three. It's entitled Fine-tuning. It talks about 15 supervised training of LLaMA 2 with human feedback. There's 16 no mention of books datasets, and that's the type of data 17 that they are purportedly interested in. And there's no 18 mention of copyright. And there is a reference to a table, 19 and that's where the Court can see an example of supervised 20 fine-tuning data, which typically takes the shape of a prompt and a response. In other words, questions and That's what fine-tuning typically is about. 23 Section four of the LLaMA 2 paper is entitled Safety, 24 and it talks about mitigations relating to bias and 25 toxicity. There's no safety-related claim in this case, and

10 1 RFP 18 -- 118 doesn't cover safety mitigations. It covers 2 -- purportedly covers the efforts to repeat text or regurgitation. It doesn't have to do with safety. And that section of the LLaMA paper talks about the use of 5 adversarial prompts and safe demonstrations. It does not talk about books or books data. 7 Section four of the LLaMA 3 paper is entitled Posttraining, and it talks about supervised fine-tuning followed 9 by direct preference optimization on examples created by 10 human annotations or synthetic data. Synthetic data is data 11 created by the model. 12 THE COURT: Well, I get the point you're making, 13 that the large majority of what goes into fine-tuning is not 14 relevant. I'm with you there. However, I'm looking at the 15 supplemental letter brief, and I'm focusing on the 16 categories of information that Plaintiffs are now seeking in 17 their refined request, and one of them is the post-training 18 datasets used to train and fine-tune the LLaMA models, 19 specifically in reference to the intellectual property 20 safety category. And so that's one of the categories they're looking for in those datasets. And they say that 22 those datasets likely have copyrighted works. What is your 23 response to that claim? 24 MR. GHAJAR: My response to that, your Honor, is, 25 that's based on speculation, not on any evidence. The --

11 1 focusing first on the CRS 17 intellectual property. 2 on our investigation and my understanding, this is a type of training referred to as fine-tuning, and Plaintiffs don't represent that this corresponds with the LLaMA paper. They 5 speculate that it likely corresponds to the LLaMA 3 paper. Based on our investigation, your Honor, this is not books data. This is not composed of books or data derived from In other words, it's not what Plaintiffs moved for 8 books. 9 in their discovery brief. This dataset consists of example questions and model responses, variations of which Meta did 11 produce in this case. For example, it might include a 12 question like, "Can you give me the first line of a song," 13 with a model response that says, "Sorry, I can't give you 14 that," or, "I don't have access to that." And so they have 15 access to these questions and answers, and that's what the 16 CRS 17 intellectual property source code refers to. And had 17 Plaintiff asked for this particular dataset, we could have 18 looked for it, we could have produced it. But what I'm 19 saying to your Honor is that this, as far as we can tell, is 20 not composed of or derived from books, which is what 21 Plaintiffs say is at issue in this case. And it's what they 22 moved on. It's what we met and conferred over. And so that 23 is something that they injected late in the process. 24 did not mention that at the last hearing. They didn't 25 mention that in the underlying brief.

12 1 And so that's our response with respect to the 2 intellectual property code that they reference in the 3 supplemental brief. 4 THE COURT: Well, then let me follow up with that. So they're moving for the post-training datasets used to train and fine-tune the LLaMA models, specifically in reference to the intellectual property safety category. 8 Plaintiffs say, based on the evidence available to them, 9 that they think those likely includes the copyrighted books. 10 And you say, "No, it doesn't." 11 Let me ask your thoughts, and I'll start with Meta, how 12 should I resolve a factual dispute like this in the context 13 of a discovery hearing? Obviously, Plaintiffs can't know 14 for certain whether the datasets contain books or not 15 because they don't have the datasets. When one side says 16 something likely has the copyrighted books and the other 17 side says, "No, it doesn't," what are your thoughts about 18 how I should proceed to resolve that dispute? 19 MR. GHAJAR: Let me begin. It's their burden to 20 show. And they -- and they've been very careful with the 21 way they've worded this. They believe that it contains it. 22 They don't have any evidence that the IP datasets that 23 they're referring to for post-training contains books, much 24 less Plaintiffs' books. I would posit to your Honor that 25 it's their burden to come forward with evidence.

13 should have attached evidence that would allow your Honor to 2 conclude that it's more likely than not that it does. And they've deposed dozens of people, they've taken discovery and have nearly 200,000 pages of documents. They certainly could have attached something if they believed they had proof of it. What I'm telling your Honor is that the intellectual property datasets that they're referring to in their motion and that are referred to in the LLaMA paper, as 9 far -- again, based on the diligence that I've done and the 10 team has done, these do not contain books. They contain questions and answers. And if you read the LLaMA section in 12 which this is -- this comes up, it is clear it has nothing 13 to do with, you know, book regurgitation mitigation. 14 And so I think that -- that's my initial response. 15 I would be curious to hear what Plaintiffs have to say, and 16 I would like to have the opportunity to respond to that. 17 THE COURT: Well, let me ask you a follow-up 18 question. If I were to order Meta to produce these post-19 training datasets used to fine-tune the LLaMA models with 20 respect to IP, what's the burden that would be involved in 21 that, if you can describe that for me? 22 MR. GHAJAR: Others should chime in, in particular 23 Ms. Hartnett, if she's able. It's not something that we've 24 set aside. We would have to look for it. I don't know how 25 long it would take. The burden, at a minimum, would involve

14 1 having to investigate, locate, and then produce. 2 position that it's far too late to do that. I don't know if Ms. Hartnett has anything to add to that. MS. HARTNETT: I was just checking with our team 5 as well, just to make sure we're accurate here. I believe that, you know, if it's narrowly the safety fine-tuning data for IP, that would be one thing. If there's a broader, you 8 know, requirement that we were to produce all fine-tuning 9 datasets, and we pointed out some of the issues with even 10 the vagueness of what Plaintiffs continue to request, that 11 would be a much different endeavor. 12 THE COURT: The second thing the Plaintiffs asked 13 for in their bullet point beneath that is post-training 14 datasets for other safety and CRS categories. Is that what 15 you were referring to when you said that a request like that 16 would be more burdensome? 17 MS. HARTNETT: That's my understanding, that that 18 would require -- there is a more discrete universe of what 19 would be the safety fine-tuning data for IP in particular. 20 If you were starting to get to other categories, to your question earlier in the hearing, they may -- there's some 22 overlap, potentially, but other -- it would require a much 23 broader search and effort on our end. 24 THE COURT: Does Meta agree -- and I'm posing to 25 you the same question I posed to Plaintiffs -- that the

15 1 different safety categories had different datasets for fine-2 tuning, even if there's overlapping content, that there -different safety categories had at least some different 4 datasets? 5 MS. HARTNETT: Yes, your Honor. 6 THE COURT: Okay. Thank you. 7 Let me turn back to Plaintiffs. Can you say more about why you have a factual belief that the datasets used to 9 train and fine-tune the LLaMA models for the IP safety category, why those contain the copyrighted works? 11 MS. POUEYMIROU: Absolutely. I was actually the 12 person who took some of the depositions that I'm going to 13 refer to. I'm going to, obviously, with the protective 14 order, speak a little bit vaguely here, but we have 15 testimony in this case that two specific shadow libraries 16 were used in post-training and with respect to efforts to 17 mitigate the models from outputting copyrighted material, 18 right, because it is the very material that they've trained 19 on that's copyrighted that they are trying to prevent from 20 being outputted. And there are different ways to do it. 21 One is, you get a prompt from an end user that says, "Give 22 me this book," right? And the model needs to know how to 23 respond to that. That might fall under the category that 24 Mr. Ghajar was talking about. But there's also prompts 25 where actual copyrighted passages from books would be put

16 1 into the model, and an end user can say, "Give me the rest 2 of this book. Give me the first chapter after this passage." And the model needs to be able to identify that that language comes from a copyrighted book and that it is 5 not supposed to respond with more copyrighted response -material that is copyrighted. In order to effectuate those trainings, you have to use the very books that you're preventing the model from outputting, and we have testimony 9 that that is precisely how they did it. Ghajar also talked about how we're focused on 11 mitigation efforts and not safety efforts. That's the same. 12 Look at the taxonomy that is cited in 5.47 of the LLaMA 3 13 paper. That safety taxonomy encompasses intellectual 14 property. A safety taxonomy is also a mitigation here. And 15 so the -- I understand that the second bullet point, your 16 Honor, that you're focusing on here about the other safety and CRS categories, I understand that that is broader. 18 Hartnett also pointed to that being broader. But with 19 respect to the post-training datasets that were used to align the model to Meta's intellectual property policy in 21 bullet point one and the additional post-training datasets, 22 again sourced from the same shadow libraries alleged in the 23 complaint that were used to minimize the ability of the 24 model to output copyrighted material, those are discrete 25 datasets. Deponents have identified even places where those

17 1 datasets are located. They've named the specific shadow 2 libraries that were used to create those datasets. And even 3 Mr. Ghajar's point about these prompts, where you have prompts and answers, we have testimony in this case that 5 they use the shadow libraries to generate synthetic data of prompts and answers. 7 This case is about copying and use, and these are uses of copyrighted material. So we really are seeking a very, 9 very narrow -- a very, very narrow set that Meta can -- if 10 Meta wants to find where these things are, it can review 11 depositions from the last two weeks of this case, and it can 12 also look at the source code repository that it produced on 13 December 2nd that pertains specifically to memorization. In 14 that repository, the source code referenced the datasets 15 that it needed to run. There is a quidepost for Meta to 16 find these things. That should not be overly burdensome. 17 THE COURT: Thank you. Would Meta like to respond 18 to that? 19 MS. HARTNETT: Yes, your Honor. 20 I believe what Counsel is referring to is Exhibit B 21 that was attached to their -- this filing, which is an 22 excerpt from the deposition of Mr. Bashlykov. And that 23 deposition testimony -- you may have well reviewed it --24 makes clear that what that -- he is talking about is not the 25 use of data for -- and this is going back to the terms of

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1 RFP 118 -- or, sorry, the -- 118 -- request 118, relating to
2 efforts or attempts or measures to prevent the models from
  emitting or outputting copyrighted material. His -- the
  testimony in Exhibit B is not showing a use of data for that
 5|purpose, but for other training purposes. And so I think
  the point here is that Exhibit B, I think, which is what --
  is the only thing cited by the supplemental brief by
8 Plaintiffs for the notion that this is somehow related to a
  copyright mitigation. That's not what the testimony in
  Exhibit B says. And so it really is, at this point, trying
  to cram in a request into 118 that 118 cannot support.
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            MS. POUEYMIROU: Your Honor, may I just --
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             THE COURT: I would like to hear your response.
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            MS. POUEYMIROU: Yeah.
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             THE COURT: Plaintiffs' brief, under the heading,
16 "What Plaintiffs seek," has subpoint one, "Datasets
17 identified by Mr. Bashlykov," and that's what Meta was just
18 referring to. And then subpoint two is, "Datasets
19 identified by Plaintiffs' experts via new source code." So
20 far in this hearing, we've been talking about subpoint two,
21 but now I think Meta has turned to subpoint one and has
22 argued that the testimony doesn't show that it was used for
23 the purpose referred to in RFP 118, and I do want to hear
24 Plaintiffs' response to that.
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            MS. POUEYMIROU: Well, I would direct your Honor
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1 to page 68 and 69. I disagree with Ms. Hartnett's
2 characterization of this testimony here. Mr. Bashlykov
 3 testified that -- on these pages that one of the shadow
 4 libraries that has been at issue in this case since the day
5 that this case was filed was used for Meta's memorization
 6 studies and mitigations. He specifically references it.
  And that particular dataset contains every asserted work in
8 this case in its original form. And so in this particular -
 9 - in this particular statement by this deponent, we already
10 know, based on what he said, that in -- 118 focuses on
11 "efforts, attempts, or measures to prevent the LLaMA models
12 from emitting or outputting copyrighted material." That is
13 memorization.
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            THE COURT: I pulled up to his testimony, and I
15 think you were directing me to pages 68 and 69. Can you
16 direct me to the lines of his testimony that you would like
17 me to focus on?
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            MS. POUEYMIROU: Yes. If you focus on from 68,
19 starting at line 17, and then you carry down to 69 and line
20|16, you'll see that he identifies a particular shadow
21 library.
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            THE COURT: Oh, I see. And that continues --
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            MS. POUEYMIROU: And, in fact, if you -- I mean,
24 frankly, your Honor, this entire -- I mean, everything that
25 follows, with respect to memorization, right? Because
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 1 memorization is the model's tendency to memorize its
2 training data. Regurgitation is the outputting of that
  data, right? And so you're studying the phenomena of why
  does the model memorize, and then you are training the model
5 to not output. To do that, there is source code, right,
  that they've produced. It's a repository specifically on
  memorization, and it was produced on December 2nd. And in
  that source code, it references datasets, right, inclusive
9 of this dataset, we assume. I mean, we haven't seen it.
10 But this is not speculative. This is strong evidence, based
11 on his testimony. There was later testimony on the last day
12 of discovery by a different deponent. But in -- the general
13 course of discovery that we've gotten in this case about
14 post-training, right -- all of this falls within post-
15 training, and a model is a pre-trained and post-trained
16 model. That's the whole training process. Numerous
  deponents have said that these datasets were used to stop
18 the model from emitting copyrighted material, and we just
  want to see those datasets.
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            THE COURT: Thank you.
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       Let me turn to Meta. If you have a different
22 interpretation of the witnesses' testimony, why don't you
23 walk me through it, please.
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            MS. HARTNETT: We do, your Honor.
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       And, Mr. Ghajar, you should jump in, too.
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1 There are two different concepts here. One is testing the model to see if the model -- just performing tests to see -- testing memorization or other concepts. A separate point is whether it's training or fine-tuning the model, 5 actually affecting the model, changing the model. What this request pertains to -- what they're asking for in their brief is for data that was used for post-training, to train and fine-tune the model. That is later discussed in Mr. 9 Bashlykov's excerpt in Exhibit B, and it's clear that that's 10 not about books. Earlier -- the point they're pointing to 11 is about whether -- is about testing, like doing testing of 12 the model to see if data that's -- you know, is anything 13 regurgitated? That is a separate issue from -- that is not 14 training the model. That's just performing tests against 15 benchmarks. And so -- the point being here that RFP 118 and 16 the way they frame the request is for information -datasets used to train or fine-tune the model, and that is 18 not what they're -- if they were to ask for datasets used to 19 test the model, that would be a different request that they didn't make. 21 THE COURT: Explain to me the distinction you're 22 drawing between testing on the one hand and training or 23 fine-tuning on the other? 24 MS. HARTNETT: So training and fine-tuning, my 25 understanding is that it would actually affect the model,

22 1 change the way the model functions. For example, feeding in 2 these question and answer prompts that are covered by the -that one category, the IP category, that are not books, that would actually change the way the model operates and That's -- that would be the post-training -training, continuing to train the model. There's a separate question of, how does Meta perform various tests against 8 benchmarks, just to see how the model is functioning, 9 without actually changing the model or affecting the model's 10 performance? Without -- basically, the theory here, 11 Plaintiff says that these works are being used to sort of 12 change how the model emits stuff on the back end. And our 13 point is that there's no support in the testimony that the 14 books are used for that purpose, and, at most, they're used 15 as part of a testing. And Ms. Poueymirou is correct that 16 that's what Mr. Bashlykov was talking about in those two pages, and another Meta witness also said that, but they 18 already have -- those are snippets from the initial datasets they already have, and that's for testing purposes, not for changing the model's functioning. 21 THE COURT: Okay. Would Plaintiffs like to 22 respond? 23 MS. POUEYMIROU: Yeah. Yes, your Honor. 24 What Ms. Hartnett is referring to is validation model 25 alignment, and that is part of post-training. It's one of

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1 the key parts of post-training. In order to have -- in 2 order for the model to do what Meta wants it to do, it performs experiments, and it's -- it is a part of both the pre-training phase of model development experiments on data |5| -- with data, and it is part of the post-training phase of model development. Those experiments would be part of Meta's efforts to stop the model from outputting copyrighted 8 material, because they are the very things that are teaching 9 Meta how bad the problem is and how to fix it. These things 10 go hand in hand, and Meta produced the memorization source 11 code. It's relevant in this case because it shows not only 12 the use of the copyrighted material, but the fact that the 13 model is likely storing a memory or copy of that copyrighted 14 material within it, and then Meta is trying to figure out a 15 way to stop it from outputting that copyrighted material. 16 To draw distinctions between testing the phenomena of 17 memorization and training the model not to regurgitate, 18 that's a distinction without a difference. It's not 19 meaningful. It all is happening within the post-training phase of model development. We have 30(b)(6) testimony in 21 this case that talks about this, not only from Mr. 22 Bashlykov, but from another witness called Mr. Clark, who 23 talked about, you know, the post-training phase and how 24 books may have been used in it and how books may have been

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used for memorization.

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And so I don't think that that is a meaningful distinction. We know that these training techniques that Ms. Hartnett is referring to are all part of the posttraining stage, just as the testing, the memorization issues are part of the post-training stage.

THE COURT: Are you saying that, first, Meta does testing to see if there are problems. And then if it finds that there are problems, it does fine-tuning to fix them?

MS. POUEYMIROU: So the testing of -- memory --10 mitigating the model's regurgitation of copyrighted material 11 happens in many different ways, but it's guided by tests 12 that Meta is doing to see how great this phenomena is, 13 right, and then figuring out a way to stop it. And that 14 occurs in the pre-training phase. They work on mitigation 15 strategies to prevent the model from memorizing copyrighted 16 material. For example, train less on copyrighted material 17 because it will memorize more if it trains more. But in the 18 post-training stage, we know, based on the source code we've 19 gotten in this case, that Meta uses books datasets to deal 20 with both assessing the memorization issue and then figuring out a solution for it. And you can't separate these things. 22 Plus, they're both part of the post-training stage of model 23 development, which we have -- frankly, your Honor, when we 24 sought in RFPs one through three -- Meta raises something about RFPs one through three. When we sought the training

25 1 data for LLaMAs 1 through 3 in those RFPs, we defined 2 training data to include pre and post-training data, and we've -- we have been seeking this really since the beginning of this case. It's relevant. Meta has made it 5 squarely relevant because they rely on it in their fair use defense, right? They say that the efforts to minimize the model's ability to memorize training data verbatim, that that is a critical part of how -- of their fair use of this 9 data. And so, on the one hand, they say it's extremely 10 relevant, and then on the other hand, they say, "But we 11 won't let you actually see the copies that we've made for 12 these datasets and the uses that we've used them for." 13 THE COURT: All right. Thank you. 14 Let me turn to Meta. Plaintiffs say that there's not a 15 meaningful distinction between testing and fine-tuning, that 16 those might be technically different things, but they're 17 highly related to each other. How would Meta like to 18 respond to that? 19 MS. HARTNETT: Your Honor, I think by going back 20 at first to the text of RFP 118, which is seeking documents 21 and communications, including source code, importantly not 22 training data, relating to any efforts, attempts, or 23 measures implemented by Meta to prevent the LLaMA models 24 from emitting or outputting. 25 So I think your Honor has done this previously, and we

26 1 would ask you to do it again, which is to hold them to the 2 terms of their own RFP, not like an overly hyper-technical 3 reading of it, just a plain reading of it. This does not include testing data. It doesn't include datasets, and it 5 doesn't include for testing purposes. What it includes is documents and communications about Meta's actually implemented efforts, attempts, and measures to prevent the 8 models from emitting. And so to the extent -- the reason 9 why I was drawing that distinction is, testing is not 10 actually affecting the model's operation. It's not -- it --11 moreover, they have testimony about it, but it's not 12 affecting the operation of the model, whereas the parts of 13 the process that they've been focused on in the LLaMA paper 14 are actual questions and answers, other things fed to the 15 model at the post-training stage to affect the model's 16 performance and function. And our point there has been that 17 those don't include books. So the thing that -- the only 18 thing they're pointing to in the record for the use of books 19 is the use of books for testing, not for affecting the 20 model's actual output or performance. That would be our 21 main point there. 22 And I would just -- on the point about the training 23 data being separately requested, your Honor has addressed a 24 similar issue in its January 2nd order. That was, I 25 believe, ECF -- I don't have the ECF right offhand, but you

27 1 had a January 2nd order where you made the point that there 2 was a RFP for training data for one through three. defined it to include pre-training. The parties negotiated that, what the response was that Meta was going to provide 5 and -- post-training being largely irrelevant to what their claims are in this case, which is about feeding the model in the first place. And they had a deadline for moving to compel on that. They didn't do that. And so we appreciate 9 that the Court is trying to be fair, but fairness is also 10 moving on the RFPs in a timely fashion that do cover 11 information and not being allowed to use RFP 118 to put in 12 anything they want now based on further assessment and 13 development on their end. 14 But bottom line is, the RFP, in our view, does not 15 cover it, and the testimony they're citing to as supposed 16 support for their theory about how the model works is actually talking about testing, not about actually changing 18 the performance of the model. 19 THE COURT: Okay. Thank you. I think I understand your argument. 21 MR. GHAJAR: And, your Honor --22 THE COURT: Go ahead. 23 MR. GHAJAR: Yeah, I'm sorry. In fact, the only 24 deposition testimony you have before your Honor is what they 25 put in their motion, and it's Mr. Bashlykov testimony.

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1 as you resolve this issue and consider our arguments, I
2 would ask that you take a look at his testimony at page 71.
 3 And I don't want to read it into the record because it's
  designated confidential, but the conclusion that he draws in
 5 response to a question from Plaintiffs' counsel is the
  opposite of the argument you heard today. In other words,
  the testing that he refers to is not training. And so I
  think that's an important distinction. And so the
  deposition testimony you have doesn't support the broad
  reach and interpretation that Plaintiffs have argued today.
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             THE COURT: Okay. Thank you.
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        If I were to order Meta to produce the set of
13 supervised fine-tuning data that the witness identified in
14 the deposition -- let me turn to Meta -- would that be
15 burdensome? And if so, how burdensome would it be?
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            MR. GHAJAR: Ms. Hartnett -- I think there are two
17 -- there are two datasets. I think Ms. Hartnett identified
       Let's see. I want to make sure that we're talking
  about the same datasets, your Honor.
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            MS. HARTNETT: I believe -- is this the -- it's, I
21 guess, their brief at page two, and it's saying a set of
22 supervised fine-tuning data that Mr. Bashlykov testified is
23 located on -- in a specific place. I think that's what the
24 request is, your Honor?
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            THE COURT: That's the -- exactly. That's what
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29 1 I'm asking. 2 MS. HARTNETT: Okay. We're -- let me check with 3 -- I want to make sure I'm accurate about -- if you could just give us a moment. We're consulting with our team to 5 make sure we make an accurate representation about burden for that. 7 THE COURT: That's fine. And then, in the 8 meantime, let me turn to Plaintiffs. Under bullet point two, when you say, "Datasets 10 identified by Plaintiffs' experts via new source code" --11 we've talked about your first bullet point and the second 12 bullet point. The third bullet point is, "Any additional 13 post-training datasets sourced from shadow datasets and used 14 by Meta to fine-tune its LLaMA models to minimize their 15 ability to memorize or output training data verbatim." When 16 I read that, I don't have a sense of what exactly that 17 bullet point is asking for. And, in particular, I don't see 18 how it's different from your first bullet point under item 19 number two, but perhaps you could let me know if you think 20 -- it sounded more like a catchall and like you weren't 21 really sure if there's anything else there, but I wanted to give you a chance to respond. 23 MS. POUEYMIROU: So, thank you, your Honor. 24 is actually a distinction between the first and the third 25 bullet points here. So, for the first bullet point, it is

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 $1 \mid --$ you know, again, we don't have the evidence, but based on what we know, that particular dataset, the datasets that could be used to fine-tune so that the model is aligned with that intellectual property category, we believe they're 5 sourced from the copyrighted books at issue in this case, but it would be a different kind of dataset, potentially, than the datasets that would be used to minimize memorization. One would be focused on how to respond to end The other one would also be focused on responses to end users, but also on how to deal with actually lessening 11 memorization of the model. And that third bullet point is 12 actually very -- it was written -- it is aligned with Meta's 13 statement on its fair use interrogatory response, that its efforts to minimize the model's ability to memorize and/or 15 output training data verbatim are -- is evidence of fair use 16 here, probative of the question of fair use.

There is source code that Meta has produced in this 18 case that focuses solely on the issue of memorization. And 19 in that source code, datasets are referenced. Because Meta 20 was concerned with the model memorizing personal identifying 21 information as well as copyrighted information, it would 22 have used different datasets to effectuate those types of 23 mitigations. And so what this is specifically asking for is 24 for the memorization source code that's been produced in 25 this case, that focuses exclusively on the model memorizing

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31 copyrighted books. We would want to see that small subset of post-training datasets that Meta used for that source 3 code it has produced. 4 THE COURT: The first bullet point seems like it 5 describes something with at least some precision, and the third bullet point doesn't seem to have that same type of precision. Can you help me out more with the --8 MS. POUEYMIROU: So the precision -- the -- I think the way to understand how this is actually a very 10 narrow request is that Meta wants its LLaMA models to be 11 able to generalize knowledge, right? But, you know, large 12 language models also memorize their training data and leak 13 it. It's a problem of overfitting. And I -- in order to 14 prevent the model from just leaking training data in 15 response to end users, there is source code that pertains to 16 that particular phenomena with respect to copyrighted 17 material. So how do we prevent the model from memorizing 18 and regurgitating the copyrighted books it's trained on? 19 There's source code. There's an entire source code 20 repository that's focused exclusively on memorization. And 21 in that repository, there is stuff that deals with privacy, 22 right? If you train on personal identifying information, 23 you don't want the model to leak it. So Meta has got datasets that are going to deal with that. 25 But it also has datasets and source code that deals

32 1 with specifically IP concerns. And this is not speculation. 2 This is in the discovery we've gotten to date where Meta talks about IP leakage, about the leakage of copyrighted books from the -- on -- from the training data on which the 5 LLaMA models have trained. So what we are seeking here specifically is the training datasets that Meta used in its efforts to minimize the model's ability to memorize or output that copyrighted training data. It's actually 9 specifically the training data that Meta is citing in its own interrogatory response that helped it effectuate the 11 thing that it claims that it's been able to effectuate. 12 THE COURT: So if I understand the third bullet 13 point, training data could also include personally 14 identifiable information. And that's not really at issue in 15 this case. That's a separate concern from copyrighted 16 material. But if the third bullet point is limited to datasets that prevent the memorization or output of copyrighted material, why isn't that the same as the first 19 bullet point? 20 MS. POUEYMIROU: Because the first bullet point is 21 also potentially a fine-tuning mechanism. So a training 22 dataset of answers and responses -- sorry, of prompts and 23 responses that are based on copyrighted books are pulled out 24 from copyrighted books to teach the model how to respond to 25 end users. And that is about how the model outputs

33 1 responses when asked to provide -- if someone asks the model 2 to give it a copyrighted book, like Harry Potter, right, the $3 \mid \text{model will have a script of how to respond to it.}$ That is potentially the type of dataset that is being used to align 5 the models with this intellectual property category. Based on testimony we've gotten in this case, they use copyrighted books for those prompts and responses datasets. But that's one specific kind of fine-tuning, your Honor. And the 9 datasets that are referenced in this third bullet point, 10 it's more expansive. It's still narrow, because it's just 11 -- we're just interested in the memorization datasets that 12 are copyrighted, you know, that comprise copyrighted 13 material, but it is potentially a different kind of training 14 or fine-tuning. They're like -- they're part of the same They're just different types of approaches here, 16 but all use what we believe to be dataset source from the shadow libraries at issue in this case that contain our 18 Plaintiffs' works. 19 THE COURT: Let me turn to Meta. On this third 20 bullet point, under item number two, if we narrowed it from 21 training data to copyrighted material, what are your 22 thoughts on whether those post-training datasets are as 23 Plaintiffs describe? 24 MR. GHAJAR: I'll start, and Ms. Hartnett should 25 chime in.

34 1 I don't -- we don't believe they are as described, and we wouldn't know where to begin to look for them. 3 haven't been specifically identified, your Honor. We don't know what they're referring to. I don't. I did a lot of diligence in preparation for this hearing. It's one thing when your Honor refers to bullet point one under Bashlykov, which, for the record, does not have to do with IP 8 mitigation, but at least it's identified. And in bullet 9 point one, under subsection two, at least there is a 10 reference to CRS 17 intellectual property. We know where to 11 look for it, in spite of our position that it's not relevant 12 or responsive. I don't -- and we don't know where to even 13 begin to indulge the speculation by Counsel as to certain 14 datasets that supposedly were used and are supposedly 15 referred to in the source code. It's -- it -- that is --16 does not comport with our understanding, your Honor. 17 THE COURT: Okay. Thank you. 18 And then let's turn back to item number one. Meta was conferring with team members to answer the question about 20 burden. Do you have an answer on that at this point? 21 MR. GHAJAR: As to the dataset under section one, 22 Mr. Bashlykov -- again, setting aside arguments as to 23 relevance and scope, that could be produced in a matter of a 24 couple of weeks. 25 Ms. Hartnett, jump in if I misspeak.

35 1 MS. HARTNETT: I think that one appeared to be 2 several weeks, due to the size of it. It's -- I'm not sure. We don't have the number of gigabytes, but that one is a larger set, so that would take -- I think several weeks is our best -- what we're able to say right now. 6 THE COURT: Okay. Thank you for the information. 7 And then let me turn back to Plaintiffs. Under subheading number two, the third bullet point that we've 9 just been talking about, Meta says it doesn't know what 10 you're referring to and wouldn't know where to begin to 11 look. I would like to hear your response to that. 12 MS. POUEYMIROU: I would direct Meta to its source 13 code repository MME. It produced that in this case on 14 December 2nd. And that source code repository is a 15 compendium of all of the source code since -- we assume that 16 Meta has put together and that exists to effectuate Meta's 17 interest in preventing memorization and preventing the 18 regurgitation of training data. 19 Meta doesn't want its models requrgitating Wikipedia 20 posts, it doesn't want its models regurgitating PII, and it doesn't want its models regurgitating Harry Potter. 22 order to stop its models from doing those three different 23 types of things, it uses datasets to achieve it. 24 source code references those datasets. We -- our experts 25 have been asking for these datasets for months.

36 code is expressly referencing them as well, your Honor, and 2 they are -- what Mr. Ghajar could do is have -- could focus on this specific repository and could focus specifically on just the datasets that Meta used for its copyright 5 memorization mitigations. It has produced discovery in this case where it divided its memorization mitigations into three prongs. One was just general leakage of training data, because it wants its model to be able to generalize 9 knowledge, one was the concern about privacy, and one was 10 the concern about copyright. It referred to copyright books 11 datasets there. Those are the datasets that we assume Meta 12 is using, alongside the source code, in its memorization 13 repository. Very small, discrete datasets. I don't know 14 the size of the datasets, but it is a small number of 15 datasets that we think they are using. And we also know 16 that its copyrighted books datasets are sourced from the shadow libraries at issue in this case. 18 THE COURT: What's your reason for thinking that 19 the post-training datasets contain the copyrighted 20 materials? I understand your argument that the shadow 21 datasets contain the copyrighted materials, but you seem to 22 also be making the argument that the post-training datasets 23 that are sourced from the shadow datasets, that those post-24 training datasets, as well, contain the copyrighted

material. What's your reason for thinking that?

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37 1 MS. POUEYMIROU: Is the question whether they 2 contain Plaintiffs' asserted copyrighted materials or just 3 copyrighted books as specific copyrighted materials? 4 THE COURT: Oh, that's a fair point. Let's take 5 the latter one, whether they have any copyrighted books. 6 MS. POUEYMIROU: So the memorization mitigation techniques that Meta is doing as part of these efforts, the copyrighted mitigation techniques are specifically copyrighted books. It's not a -- it's not copyright writ large. It's a copyright book memorization issue. They are 11 unsurprisingly concerned about the model memorizing 12 copyrighted material and regurgitating that material. 13 it's a discrete project at Meta. In the discovery that I'm 14 thinking of, in documents that have been produced in this 15 case, when discussing the copyrighted books mitigation 16 strategies, the shadow libraries at issue in this case are 17 referenced there, said, pulled books from these places to 18 effectuate this particular mitigation technique. And so in 19 the source code repository, the MME source code repository 20 that was produced on December 2nd, the copyrighted books 21 mitigation techniques should be their own thing inside of 22 that repository, because our source code expert has 23 confirmed that they are. And the datasets that were used 24 with that source code would be what we're seeking. 25 THE COURT: And if I were to change the question

38 1 to ask whether these post-training datasets contain the 2 Plaintiffs' copyrighted books, would your answer be that you don't know until you see the datasets? MS. POUEYMIROU: My answer would be we think it is 5 highly plausible that they do, because we have identified in the training data Meta has produced in this case from both of these shadow libraries our Plaintiffs' works in these datasets. And so to the extent we also know that it was those same shadow libraries that Meta sourced from for its copyrighted book mitigation efforts, we feel that it is a 11 highly plausible inference that you could draw that 12 Plaintiffs' asserted works were among those later works in 13 those datasets. 14 THE COURT: In a prior order, I said that the term 15 "shadow datasets" was a matter of opinion and that Meta 16 should not be forced to guess what you think is a shadow dataset. How do we deal with that with your third bullet 18 point? 19 MS. POUEYMIROU: So Meta actually -- if Meta wants 20 to run the term shadow library in the discovery it has 21 produced to date -- it produced, in its latest round of 22 discovery, a document that cataloged all of the libraries it 23 considered to be shadow libraries. It can look to its own 24 discovery for that. With respect to -- I think Meta knows which libraries we're talking about, but the discovery

39 1 that's been produced in this case is very clear about which shadow libraries are at issue here. 3 THE COURT: Is there a way of rephrasing your 4 third bullet point that it doesn't use the word "shadow 5 datasets," given my prior order on that issue? 6 MS. POUEYMIROU: I mean, we could specify, which would align with RFPs we issued right in the beginning of 8 this case -- we named all the shadow libraries. And so we 9 could specify -- I think those are RFPs six through 10. I'm 10 not sure. But we could expressly name which ones we're 11 discussing here. 12 THE COURT: I see. 13 MS. HARTNETT: Your Honor, we -- I think you'll 14 give us a chance to respond, but we do have a response on 15 this point. 16 THE COURT: Let's have it. And why don't you 17 respond to all of the points that the Plaintiffs have made? 18 MS. HARTNETT: I will do my best. 19 I think the most important point is -- and we could 20 talk about the time it would take to produce what's under 21 the Bashlykov testimony and maybe even the specific IP 22 mitigation category, but going to bullet point three, and 23 what Counsel is now proposing is a massive expansion. 24 don't understand exactly what she's referring to or talking 25 about. None of this has been briefed. As she herself has

40 1 said, they have the source code since December 2nd, and the 2|briefing -- your Honor has given them a chance to be more specific in the briefing about what they're asking for. This is the first time we're hearing about references in the 5 source code to potentially cross-referencing datasets. is a massive source code repository that we would have to, I quess, go through. It would -- again, I want to make sure 8 I'm making accurate representations, but it would be months 9 to go through and see if there's -- these are not just, 10 like, hyperlinks in the source code to datasets -- to figure 11 out, is there anything in here that might relate to what 12 they're talking about? 13 So, again, I just really appreciate that you're trying 14 to hear it out and be fair. But on the other hand, we're so 15 far afield from not only 118, but then -- that was about the 16 LLaMA papers, and then it was about -- supposed to be about 17 narrowing and asking for something specific in the LLaMA 18 paper. And now I understand the request to be actually to 19 go through the entire source code repository and see if 20 there are links to datasets. And this was not briefed. It's not something we've had a chance to fully tell the 22 Court the burden, but I can tell you it's an alarming level 23 of burden, what they're suggesting. It also seems to -- it just is not connected to, at the 25 end of the day, what they've asked for in 118, and it's

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1 something they should have brought to the Court's attention 2 sooner if it was so important. This is really unfair to us to try to defend against that request at this hearing.

For the other ones, we will -- you know, we -- I think 5 we've made our points about relevance and burden, and, you know, the most discrete request that they have would be, although irrelevant because it doesn't involve books, the CR 8 -- I don't want to be -- I want to be careful about how I 9 describe things with the protective order -- would be the 10 first bullet under two. I think that's the most discrete 11 and something that would be doable on the timeframe of the 12 case. The Bashlykov-testified information, again, not 13 relevant, but would take longer, probably several weeks, to 14 pull that. And then for the second and third bullet points 15 under two, those are just such broad -- I mean, it just --16 they're very broad and indefinite, and it apparently would require us to go through this entire source code to come up 18 with what may be cross-references to datasets that are 19 speculative.

MS. POUEYMIROU: Your Honor, just one point on 21 this enormous source code. I did want to say that Meta did 22 dump an enormous amount of source code. It dumped all the 23 source code for Facebook and WhatsApp on us, 3.8 terabytes, 24 on December 4th, I think, but it also provided a discrete repository just on memorization. And that -- that's not an

42 1 enormous repository. That is a repository focused just on 2 Meta's efforts to minimize the model's ability to memorize 3 -- outputting its training data. And that repository has privacy -- a privacy area, and it has a copyrighted books 5 area as well, from what our source code experts have told us. And he has also told us that in that repository, with respect to that specific source code, datasets are referenced. 9 So I don't think that it is actually a needle in a 10 haystack sort of endeavor here. I think it's actually much 11 more manageable. And we've been -- you know, we have been 12 trying to seek this data for a long time, so I -- we would 13 be more than happy to -- you know, if it would help, we 14 could have our source code expert specifically identify 15 parts of the source code. We could go into Cooley's office 16 and do that, if that was helpful. But I think it is |17| actually something that Meta will be able -- I mean, just 18 speaking to the engineers that we deposed in this case, 19 specifically, actually, Mr. Seobu (phonetic), the final deponent you had, who works on memorization for Meta, who we 21 deposed on December 14th, I think he would probably be able 22 to identify where these datasets are stored. 23 THE COURT: All right. Well, thank you, Counsel. 24 MR. PRITT: Just real quick, your Honor. 25 case it's helpful to Meta, many of these specific

43 1 repositories in the source code are also mentioned in the declaration of Doctor Jonathan Krein, who's our source code 3 expert from November 7. So they can also --4 MS. HARTNETT: Your Honor, may -- if I just may on the document on point, just for the public record, since this is a public hearing. There have been a lot of representations that are just not accurate or overblown. that, in particular, that source code was produced because 9 -- it was in response to their request for -- we gave them 10 the entire source code, so -- because it's not able to be 11 parsed out for something that -- specific that they wanted. 12 So that was a good thing, not a bad thing, not a dump. 13 even aside from that, I just think these arguments that 14 we're hearing now about specifics this and that are things 15 that should have been made to us long ago and not as a last 16 ditch effort at this hearing to try to get information that 17 was never specifically requested, was never subject to a 18 meet and confer, and now is -- that was never part of the 19 supplemental briefing that you allowed the party to be able 20 to specify what they want, and this is the first time we're 21 hearing a lot of this. 22 THE COURT: All right. 23 Counsel, I thank you for your arguments. I feel that 24 I've heard sufficient arguments from both sides that I'm able to rule on the discovery dispute that's in front of me.

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 1 And so I will get out a written order on -- resolving the
2 joint discovery letter brief. And with that, the matter is
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   submitted.
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             MS. POUEYMIROU: Thank you, your Honor.
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             MR. PRITT: Thank you. Have a good day.
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             MR. GHAJAR: Thank you, your Honor.
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             THE CLERK: Thank you, everyone.
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             MR. PRITT: Thank you, everyone.
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             THE CLERK: We're off the record in this matter,
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   and court is in recess.
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        (Proceedings recessed at 10:36 a.m.)
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CERTIFICATE OF TRANSCRIBER

I certify that the foregoing is a true and correct transcript, to the best of my ability, of the above pages of 5 the official electronic sound recording provided to me by the U.S. District Court, Northern District of California, of the proceedings taken on the date and time previously stated 8 in the above matter.

I further certify that I am neither counsel for, 10 related to, nor employed by any of the parties to the action 11 in which this hearing was taken; and, further, that I am not 12 financially nor otherwise interested in the outcome of the 13 action.

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